"Blue Gull" Handbook

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INTRODUCTION

The operational concept of Detachment "G" calls for the capability of world wide deployment on short notice to provide reconnaissance of denied territory. The ability to operate from aircraft carriers greatly increases our operational flexibility for carrying out these missions. However, landing the U-2 aboard a carrier is a very precise and demanding maneuver. A considerable amount of training is required to develop the skill and confidence required for conducting safe carrier operations. This training has been assigned the unclassified name of "BLUE GULL". PHD 50-10-17 sets forth Phases I, II, and III of this training that must be accomplished before a driver can be designated operationally ready to fly missions from a carrier. The purpose of this manual is to establish guidelines for the coordination and conduct of the carrier training that leads to qualification. Discussion and briefing guides are presented which incorporate the experience of BLUE GULL V and previous operations. It does not necessarily follow that future exercises will be conducted in exactly the same manner. An aircraft carrier has a very flexible schedule. We must be prepared to deviate from our normal operations so that we can fit into their crowded schedule. This manual is not intended to supersede timely good judgment, but rather to assist in accomplishing carrier training in the safest and most expeditious manner possible. It is published to assist Detachment "G" and the Landing Signal Officer (LSO) in planning and conducting "BLUE GULL". As the mode of operation changes it will be the responsibility of the Detachment "G" LSO to upgrade this manual.

PHASE I TRAINING

PHD 50-10-17 requires initial qualification in a Navy training aircraft. This is normally accomplished at Training Squadron Four (VT-4), N.A.S. Pensacola, Florida in the T-2 aircraft. That squadron's mission is to give the student Naval Aviator his first opportunity at carrier qualification. The T-2 is ideally suited for this mission. It is a simple, easy to fly jet trainer that holds an outstanding carrier safety record.

Project Headquarters will coordinate and request approval for the drivers to go to VT-4. The Detachment "G" Landing Signal Officer (LSO) will accompany all drivers during their training. Project Headquarters should be very specific in requesting this training to insure the following items are agreed upon:

a. The drivers should fly the T-2 solo during qualification. This will require a waiver to Naval Air Training and Operations Procedures Standardization (NATOPS) which specifies 50 hours in type for carrier qualification. Due to the high experience level of our drivers and the simplicity of the T-2, this should not be a problem. In the past an abbreviated familiarization program and several dual Field Carrier Landing Practice (FCLP) sorties have adquately prepared the drivers for solo FCLP and carrier qualification.

b. The Detachment "G" LSO should control the drivers landings approaches on the field and on ship. Since the close working relationship between driver and LSO is so important during U-2 operations, it should be nurtured from the beginning. It is important that the LSO know how each driver responds and adapts to the varying situations around the ship since the LSO's judgment is the determining factor in the pilot's qualification. Dangerous trends could be spotted early in the program that might later save the Project embarrassment and loss of valuable aircraft or pilot assets. This request does not imply that VT-4 should not provide one of its own LSO's to assist

and help supervise the operations. On the contrary, the experience of one of VT-4's LSO's would be a valuable asset to the program.

c. Our carrier landing requirements will be 2 touch-and-go plus 8 arrested landings. This will be the driver's only chance to get carrier experience prior to landing the U-2 aboard ship and it is imperative that they get as much training as possible during this exercise. Navy student pilots normally receive 2 touch-and-go and 4 arrested landings.

d. The Detachment "G" LSO should get requalified in the T-2. During the tour here no opportunity is afforded him to stay current in carrier operations and procedures. All Navy units consider it imperative that their LSO's stay current and Project Headquarters should consider LSO recurrency as part of the total requirements. His requirements are 2 touch-and-go and 4 arrested landings.

In the past there has been some problem with coordination of these requirements. To insure proper coordination of the operation, all parties concerned should meet together to resolve all problem areas in advance. The following people should attend this meeting: Project Headquarters Operations Representative, VT-4 Commanding Officer, Detachment "G" LSO, and a Naval Air Training Command Representative.

It is desirable to have the LSO preceed the drivers to Pensacola. He can spend one or two weeks at VT-4 familiarizing himself with local procedures and aircraft systems, flying the T-2, and observing FCLP and carrier landings. He is then ready to return to Edwards and prepare the drivers for the operation.

Back at Edwards, the LSO will conduct a ground training syllabus on the T-2 and administer the handbook exams. He will give the drivers a preview of Pensacola Course Rules and VT-4 Standard Operating Procedures (SOP). Finally, each driver will be introduced to FCLP in the T-33 at the North Base runway. This advance preparation is

is mandatory. It greatly expedites the operation when the drivers arrive at VT-4 by easing the workload on the instructors there. Due to the vast experience of our drivers, the instructors inadvertently tend to rush the lectures and not adequately cover all areas in enough detail to suit the drivers.

Once at Pensacola, the ground training is completed by reviewing the systems and emergency procedures, a cockpit familiarization, a practice engine start and shutdown, and a final review of local procedures. The last item prior to flight is obtaining a temporary issue of flight gear for the drivers. This may be a problem and should be coordinated with the VT-4 Commanding Officer well in advance.

Once flight training starts the drivers will fly instructional transition flights until they are "safe for solo". After soloing, an FCLP procedures lecture and film are presented as prerequisites for FCLP.

FCLP training consists of approximately 2 dual flights and then solo FCLP sorties until each driver is certified field carrier qualified by the LSO. Normally, 8-10 sorties are required. NATOPS limits a pilot to 2 FCLP sorties per day.

Each driver will then receive the standard carrier qualification briefing as specified by NATOPS and VT-4 SOP. Carrier qualification will be conducted in accordance with all regulations. Our requirement for 8 arrested landings may necessitate a refueling aboard ship or perhaps 2 sorties to complete. Normally, 2 weeks at VT-4 are required to complete this phase; however, more time may be needed if a carrier is not available for qualification immediately upon completion of FCLP.

Phase I training is a "one time" qualification and has no periodic recurrency requirements. It is required however, prior to Phase II and Phase III.

PHASE II

Phase II training is the FCLP in the U-2. It may be directed by Project Headquarters as part of a Blue Gull exercise or the Detachment Commander may, from time to time, schedule FCLP to increase proficiency in order that a high degree of operational readiness can be maintained and to retain currency in accordance with PHD 50-10-17. Approximately 2 weeks are needed to adequately prepare for a carrier qualification period. FCLP should be scheduled far enough in advance to allow for slippage due to unfavorable weather and winds.

Prior to conduct of FCLP, each driver will receive an FCLP procedures briefing from the LSO. The outline for this brief is on page 7.

A driver who is making his initial qualification normally will not have had an opportunity to fly the U-2 with 50° flaps. An additional 30 minutes should be added to the first FCLP sortie to allow the driver time to familiarize himself with the handling characteristics of the aircraft in that configuration at altitude. A fuel load of 788 gallons is recommended for this sortie. For normal FCLP sorties, a 588 gallon fuel load is recommended. A driver should be scheduled for only one FCLP sortie per day. Operational necessity may dictate a second sortie on certain days; however, two FCLP sorties is the absolute maximum per day. If scheduling considerations permit, FCLP should be conducted in the morning hours to take advantage of the calm smooth air. Two aircraft in the pattern at the same time produce a smoother and more desirable operation. The number of FCLP sorties required to achieve a satisfactory level of performance will vary with each individual pilot; however, 8 sorties are normally needed for initial qualification and 4 sorties for refresher pilots. A sortie consists of at least 8 FCLP passes. The final FCLP sortie should not preceed the

the carrier qualification by more than 5 days for drivers who are initially qualifying. All drivers should be in the mobile to observe FCLP when they are not flying. Much can be learned by watching the approaches of the other drivers. Each driver will fly FCLP sorties until such time as the LSO certifies him field carrier qualified. Upon completion of FCLP the LSO will advise Project Headquarters by message of the drivers that are certified field qualified. An L[illegible] contained in the operations annex.

DRIVERS FCLP BRIEF

The following subjects must be covered by the Detachment LSO prior to, and as necessary, during FCLP:

I. Optical Landing System:

a. Capabilities

b. Limitations

II. General Procedures:

a. Communications

1. Tactical frequency

2. Mobile monitor tower or tower will monitor 315.9

b. Pattern (See page 9)

1. Turns

2. Dimensions

3. Altitudes

4. Speeds

c. Line-up

d. Landing and go-around

III. Specific Procedures:

a. Takeoff - Normal.

b. Stall Checks

c. Pattern entry

d. Upwind turn

e. Down wind leg - fuel transfer

f. Landing check

g. 180° position

h. Approach turn

i. Meat Ball acquisition and voice report

j. Glide slope entry and technique

k. Line-up - critical at the ship

l. Cut

1. Power to idle

2. Spoilers out

m. Touch down

1. 2 point attitude

2. Line up

3. Don't worry about touch down point

4. Spoilers in and power for go-around

n. Wave-off

1. Mandatory

2. Voluntary

3. Techniques

o. Lost communications

1. LSO

2. Aircraft

p. Final landing

q. Emergency procedures

r. Debrief procedures

IV. Show video tape or movies of previous FCLP periods.

V. Flying safety is paramount during this exercise.

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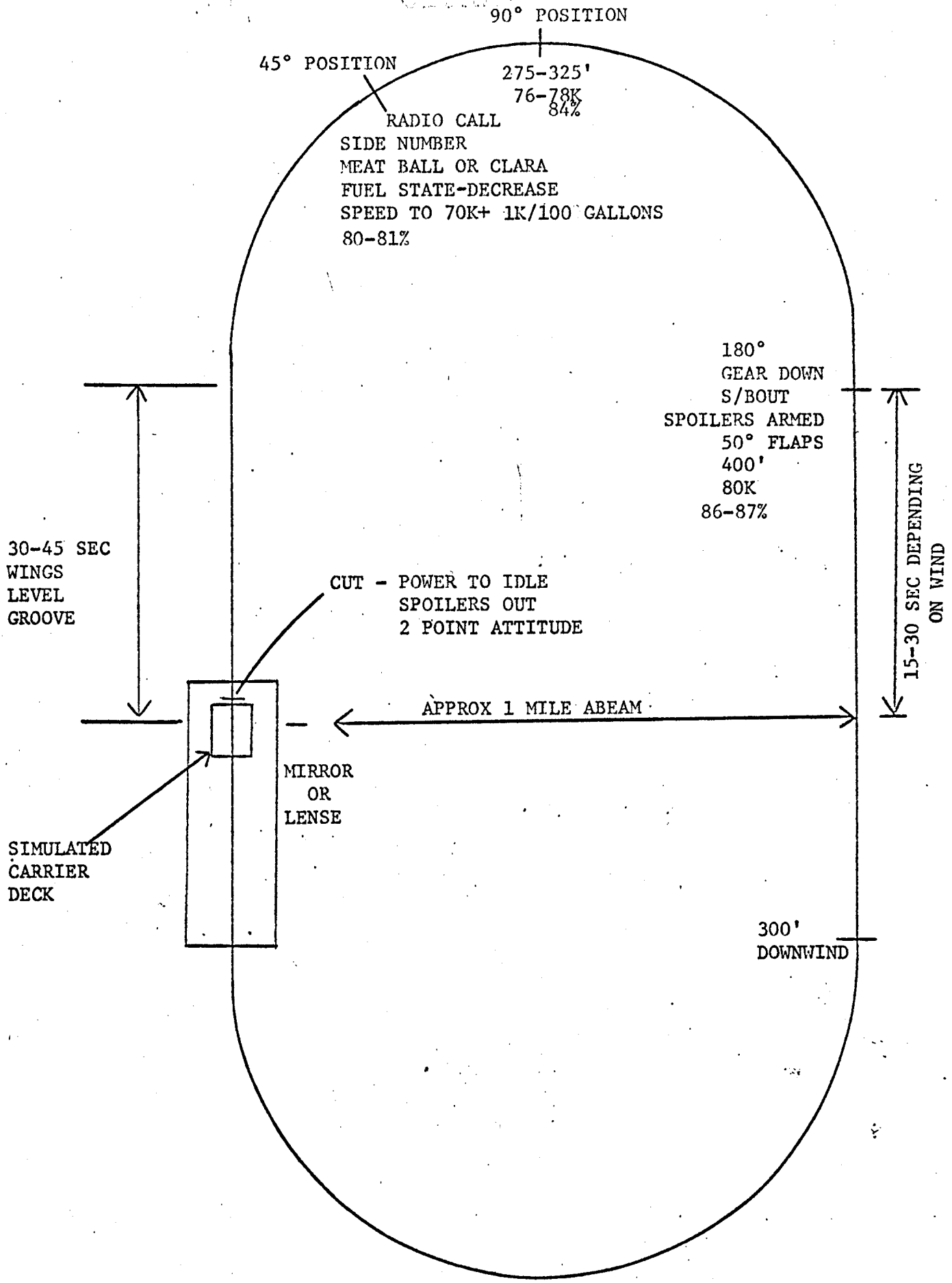

TYPICAL FCLP PATTERN

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PHASE III

This is the actual carrier qualification in the U-2. Successful completion of Phases I and II is a prerequisite for Phase III. The minimum requirements for qualification as set forth in PHD 50-10-17 are 2 low approaches, 2 touch-and-go landings, and 4 arrested landings. PHD 50-10-17 also outlines the requirements for currency. Since pre-deployment preparation is of such paramount importance the discussion of this phase will be divided into 2 sections: Pre-Carrier Preparation and On Board Procedures.

PRE-CARRIER PREPARATION:

All Blue Gull exercises will be directed by Project Headquarters. They will make the initial contacts with the Navy. There is an OPNAV instruction which specifies the proper channels for the Agency to obtain support from the Navy. It is imperative that all coordination be made through these channels so as not to alienate the good working relationship we have with the Navy. Once approval has been obtained at the Washington level, Project Headquarters will be directed to meet with the appropriate Chief of Staff (COS) for the Commander Naval Air Forces either Atlantic or Pacific fleet. Those commands have operational control of stateside carriers. Normally the following Detachment "G" staff members will be directed to attend this meeting: Commander, Director of Operations, Director of Materiel, and LSO. In most cases the COS will have the prospective ship's Commanding Officer present to discuss the operational and support aspects of the exercise and obtain the final approval from the ship's operational commander. It is highly desirable to use the Kitty Hawk and larger class carriers for landing operations. The Forrestal through Independence class can be utilized. However, due to the smaller deck configuration, our safety margin is reduced somewhat. If the article is to be moved to the hangar deck, the Kitty Hawk and larger class is almost required since the nose of the

article would have to be removed to accomodate the hangar bay opening on the Forrestal through Independence class. (See Operations Annex.) The nose dolly would add an extra 1300 pounds of support equipment. 20-30 additional minutes are required to remove the nose.

Once approval for the ship has been received, a determination will be made by Headquarters Security and the ship's Commanding Officer on which members of the ship's staff are to be briefed Idealist. In past exercises it has been advantageous to brief the ship's C.O., X.O., Operations Officer, Air Officer, and Communications Officer. The LSO will obtain the following information from the ship's Captain's office on each staff member to be briefed:

a. Name

b. Birth date

c. Birth place

d. Date and Clearing Agency of most recent background investigation.

This information must be forwarded to Security far enough in advance so that Headquarters can certify through the Navy that these people are eligible for an Idealist briefing.

Once the mode of operation and personnel requirements have been determined, each section should submit to Operations, their personnel roster and to supply, their cargo manifest for the impending deployment.

About 2 weeks prior to the exercise, and when directed by Project Headquarters, the ship's staff will be briefed. The Detachment "G" staff members who participate are the Commander, Director of Operations, Director of Materiel or Maintenance Supervisor, Security, LSO, and Communications. This meeting is usually held aboard the carrier. (See page 16 for the briefing guide.) This briefing is

important in that it may be the only chance to coordinate with the ship prior to the detachment arriving on board. The briefing has two purposes: first, to run a survey on the ship's facilities and second, to insure that the ship's staff has a thorough understanding of the operation. There should be no unanswered questions at the completion of this meeting. Video tapes, visual aids, and movies showing previous exercises should be used to supplement the briefing.

Prior to the departure of the support equipment and security courier for the ship, the entire deployment team will receive a ship's etiquette briefing from the LSO. To prevent possible personnel injury or embarrassment to the project, this briefing is mandatory for all detachment members going aboard ship. It is usually given in conjunction with the Commander's Briefing. (See page 23.)

The CVA NATOPS Manual delegates the responsibility for pre-carrier procedures lectures to the individual unit commanders. "Ship's company personnel should assist when feasible". In our case this is not feasible. The LSO will fulfill this requirement. The briefing guide for the driver's carrier procedures is on page 29 .

ON BOARD PROCEDURES:

There are two methods to get the detachment aboard. The first is to walk aboard before the ship leaves port; the other is to fly aboard via C-1A aircraft, sometimes called the "COD". Once aboard, a room and telephone list must be prepared for Security and the detachment must establish a duty officer in our assigned ready room. During flight quarters, the duty officer should be someone who has a good operational knowledge of the operation. At other times, any member of the detachment may act as duty officer. Arrangements will be made to have a cot in the Ready Room so that a

duty officer can remain on station in the Ready Room overnight. A detachment meeting should be called as soon as all personnel are established aboard to review emergency drill procedures, review the schedule of events, and pass on any other pertinent information which may include briefings from the ship's staff. The detachment will be assigned to the Air Officer for emergency drills and should make their phone reports to the Air Department Office. Continuing emphasis on our civilian cover story is required to insure that it is not compromised.

All section heads should meet with their ship's counterpart as soon as possible (i.e., commo with ships communications officer). P.E. will brief the Helo crew and the Flight Deck Crash and Salvage crew on the cockpit and crew escape systems of the U-2. Security should review the cover story with the Captain prior to his reading it to the crew. The communications link with CACTUS will be tested. The navigators will locate AirOps and familiarize themselves with the ships intercommunications and AirOps procedures. They will also establish the color code grid system for passing the ships position to CACTUS. (See Navigation Annex.) The Maintenance Supervisor should check periodically to insure that all his equipment is secured. He will need to coordinate an elevator lift with the aircraft handling officer to move the support equipment from the hangar deck to the flight deck prior to operations. The LSO will check with the Lens Room to insure they are familiar with the procedures for setting and pole checking a 2 3/4° basic angle with a #2 target wire. (See Operations Annex.)

On the day of the exercise, HF contact should be established with CACTUS at least one hour prior to the driver's flight briefing. The overhead time will be confirmed and the ship's weather and expected position (using color grid) will be passed. The Maintenance Supervisor will insure that all required support equipment is secured

on the flight deck near the island. At launch time all personnel will proceed to their assigned stations. Disposition of the detachment will be at the discretion of the on board commander; however, the following is recommended:

TITLE	STATION
Commander	Pri-Fly
Ops Officer	Pri-Fly
Mobile Pilot #1	Pri-Fly
LSO	LSO Platform
Mobile Pilot #2	LSO Platform
Flight Planners	AirOps
Maintenance Supervisor and Crew	Flight Deck
POL and Avionics	Flight Deck
Security	Island or Bridge and Flight Deck
Commo	Pri-Fly or Comm Center

Additionally, at launch time, the Helo crew should go to Condition I. Prior to the landings or low approaches, the Captain will pass to the crew over the 1-MC ("Squawk Box") the cover story which security gave him. This usually says that this exercise is part of a joint Lockheed-Office of Naval Research (ONR) project to determine the feasibility of using the U-2 as a long range, high altitude Anti-Submarine Warfare (ASW) platform. He also advises the crew of the classification and special rules (no photography or discussion) concerning the U-2 aboard ship. This story continues to be very effective as there are very few Navy people outside of those actually involved who have any knowledge of the operation.

Prior to the aircraft entering the pattern, the cross deck pendants will be removed. The U-2 uses no wires for low approaches or touch-and-go landings. #1 and #2 wires are used for arrestments with #2 being the target wire for lens setting purposes.

Landings will be conducted as pre-planned until completion of the exercise or until such time as the Captain or DETCOM deem it unadvisable or unsafe to continue. Pilot switches will be as scheduled either on deck or on the beach. Timing is very important and all hands should expedite the landings and launches as much as possible. However, flying and ground safety are paramount and must never be compromised to speed the completion of exercise. This is important to keep in mind since this operation looks like "slow motion" compared to an operational Navy exercise and in almost every area, the ship's personnel will try to hurry our procedures. Once the exercise is complete, the maintenance crews will repack, move to the hangar deck, and secure their support equipment. All hands will then check in at the Ready Room for personnel and equipment off-loading schedules. Applicable message traffic will be sent to CACTUS and Headquarters prior to the detachment off-loading.

Upon arrival at CACTUS a complete report of the exercise will be prepared and submitted to Project Headquarters within 10 working days.

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SHIPS BRIEFING GUIDE/SURVEY SHEET

I. Security - Idealist briefing forms (if applicable)

II. Introductory Remarks:

- A. Project Headquarters
- B. Detachment Commander
  - 1. Location, mission, and organization
  - 2. Comments on previous Blue Gull exercises

III. Security Briefing:

- A. Captains cover story
- B. No cameras during our exercise
- C. Security assistance requested
  - 1. Marine guards
  - 2. Procedures for article RON aboard
- D. Request no plane guard destroyer
- E. Refer to Edwards as "Homeplate"
- F. Our team members all have top secret clearances
- G. Pilot Landing Aid Television (PLAT) tape
- H. Headquarters will specify procedures if other ships are in the area (i.e., discontinue landings).

IV. LSO Support Brief and Survey (Information we need from ship)

- A. Ship's mission and operating area for this period
- B. Rooms for __ people
  - 1. All have GS rating of officer equivalent
  - 2. Personnel roster

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3. Indicate which personnel rate single rooms if they are available.

C. Meal Schedule

1. Ward room in use

2. Breakfast, lunch, and dinner hours

3. Mess bill paid as a group

D. Uniform

1. Navy

2. Civilian

E. Ready Room (or Flag Ops)

1. Need a safe for storage of classified

2. We'll provide duty officer

a. Request a cot and bedding for duty officer

F. Ships autovon phones in port and extensions.

G. Schedule for getting underway

H. Commo

1. HF with beach in pri-fly

2. Message traffic

I. Support Equipment

1. Size, weight, and cube

a. Largest item or items

2. Storage space

3. Load aboard and off-load

a. Contact and phone extension

b. Schedule

4. Our security man will remain aboard

5. Marine guards

J. Fuel - JP-5 or JPTS

1. Fuel truck (60,000 pounds)

2. FP-5 fuel rig (single point)

K. Flight Deck Clothing

1. We furnish red jersey and goggles

2. Request headsets

L. On Off-Loading of Personnel

1. Walk aboard

2. C-1 requirements

M. Frequency card and ships call sign

V. LSO Operational Brief:

A. Drivers background

1. Highly experienced - ex-military

2. VT-4 training

3. Previous Blue Gull experience

B. Landing Requirements

1. Number of drivers

2. Low approaches, touch-and-go landings, and traps

3. Deck time required and proposed timetable

a. Discuss high stalls and pattern entry

C. Aircraft Nav-Aids

1. TACAN and LF-ADF

2. Status of Lo-trout

3. IFF

a. Do you want a particular mode II squawk?

b. Mode III code

D. Grid System for Passing Ships position to Homebase (color coded)

E. Enroute Procedures

1. No flight plan - below APC

2. Handle as any other aircraft

3. Review 3 cases of recovery

F. Weather Minimums

1. 1,000 ft/3 miles

2. May be waived by Detachment Commander in agreement with ships C.O.

G. Wind-Over-the-Deck

1. 20K optimum

2. We have worked 35K - very undesirable due to turbulence

3. 15K maximum for side movements - 5-10K optimum

H. Pattern: Altitude = Prop, Path over water = Jet

1. Downwind - 400ft, 80K

2. Final 70K basic, plus 1K/100 gal fuel

I. Aircraft Weight

1. 18,700 pounds dry

2. 22,000 pounds max landing (500 gal fuel)

J. Arresting Gear

1. Set 20,000 pounds

2. No wires during touch-and-go landings

3. #1 and #2 wires only for traps

K. Lens

1. 2.75° basic angle for 20-30K wind-over-deck

2. 3.0° basic angle for 30-35K wind-over-deck

3. Hook to eye value 10 feet

4. #2 wire target

5. Discuss method for setting 2.75°

6. See attachment to PHD 50-10-17 for roll angles settings

7. Verify by message from ship to NAEC PHILA

L. Landing

1. Cut and spoilers

2. 2 point attitude

3. Wing drop on roll out

M. On Deck

1. Speed brakes in - LSO or Pri-fly radio call if necessary

2. Pogos

3. Hook up and taxi over wire

a. Hook located forward of tail wheel

4. Push back

5. Launch or shut down

6. Refuel (if applicable)

a. Truck or rig for single point nozzle

b. Discuss importance of level fuel load

6. Restart

a. GTC 100 (45 PSI air)

b. 400 cycle power with 28v to pin E (we have adaptor)

c. About 3 min after start till ready for launch

7. For towing, request our man drive the tug

N. Deck Launch (300 feet)

1. Remove pogos - crew holds wing - we need one minute warning

2. 75% hold brakes

3. We can go on either straight or angled deck from spot of push back. Straight deck safer because heavy wing or wing drop on launch might contact lens.

O. Discuss pilot switches, stall check and pattern re-entry

P. Bingo

1. Primary fields

2. Flight planners in AirOps

3. Request COD on standby to transport maintenance crew

4. Helo escort on emergency bingo

Q. Deck Handling (if required)

1. Run down wind as required. 15 KT maximum wind-over-deck. 10KT optimum

2. Side moving procedures

3. Request COD on standby to transport maintenance crew

3. Hangar deck security

R. Crash and Rescue

1. P.E. brief Helo crew and flight deck crash personnel

2. Discuss action for damaged aircraft

3. Request Helo go Cond-I when aircraft goes feet wet

S. Pri-fly Observers

1. Det Commander, Ops Officer, and Mobile Driver

2. Commander desires SPN-12 (Doppler closure rate radar)

3. Commander desires speaker on land-launch frequency

T. Pilot Brief

1. Det LSO will brief pilots on carrier procedures

U. Flying safety is paramount and will not be compromised for any reason!

SHIPS ETIQUETTE BRIEFING GUIDE

I. Schedule of Events

A. Ships information:

1. Name and hull number

2. Home port and pier location

B. Procedures for getting aboard:

1. Station

2. Parking area

3. Ship

a. Fwd brow and list of rooms

b. Explain quarter deck and OOD

4. Support equipment loading

a. Time and place

b. Contact and phone number

C. Ships Schedule

1. Underway time

2. Blue Gull dates

3. Debarkation and off-loading time and procedures

4. Ships mission while we're aboard

D. Blue Gull Schedule

1. Schedule once aboard

2. Takeoff and overhead times

3. Probable timetable

4. Assigned stations

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II. Security

A. Cover Story:

1. ONR/LOCKHEED Project

2. Civilian clothes

3. No Air Force jackets or uniforms

4. No mention of military affiliation

5. No cameras

6. Do not discuss project with ships personnel

B. List of Idealist cleared personnel aboard ship

C. Primary contact aboard ship

III. The Ship

A. Compartmentation 03-154-2-L:

1. 03 Deck - Hangar deck is datum 1st deck

a. 01, 02, etc., above

b. 1, 2, etc., below

2. 154 frame number-bow is datum-first frame

3. 2 - which side of ship

a. 0 center line

b. Odd stbd

c. Even port

4. L-Purpose code (L-living space)

B. Dress regulations

1. Flight deck uniform

2. Meals and ward room lounge

C. Ward room

1. Meal hours

2. Seating

3. Dirty shirt table or ward room

4. Meal count and payment

D. Staterooms and assignments

1. Locks

2. Cleanliness

3. Stewards

E. Heads

1. Navy shower (take soap)

2. Water hours

F. Ships stores

1. Cigarettes and limits

2. Perfume, film, etc.

3. Barber

G. Emergency stations

1. General quarters

2. Man over-board

3. How to report fire or man over-board.

H. Visiting spaces

1. Bridge

2. LSO platform

3. Pri-fly

4. Engine room

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5. CIC

I. Flight deck operations

1. Colored jerseys

2. Flight deck control

3. Catwalks

4. Hazards

J. Ships organization

1. Block diagram

2. Nicknames, respectful

a. Skipper

b. X.O.

3. Names

a. LCDR and below - Mr. (name)

b. CDR and above - (Rank) (name)

4. Don't disturb C.O. and X.O. unless absolutely necessary

5. When CO enters a space, stand up

K. Medical-Dental attention and facilities - location

L. General Do-Nots

1. Smoking lamp

2. Booze

3. Hats or FOD on island or flight deck

4. Bridge area

5. Security of equipment

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a. Don't leave anything laying around or valuables unlocked.

b. Secure all gear on flight deck or hangar deck.

6. Limited access areas

M. Stress importance of "being available"

N. Safety is paramount during all phases of this exercise and <u>will not</u> be compromised!!

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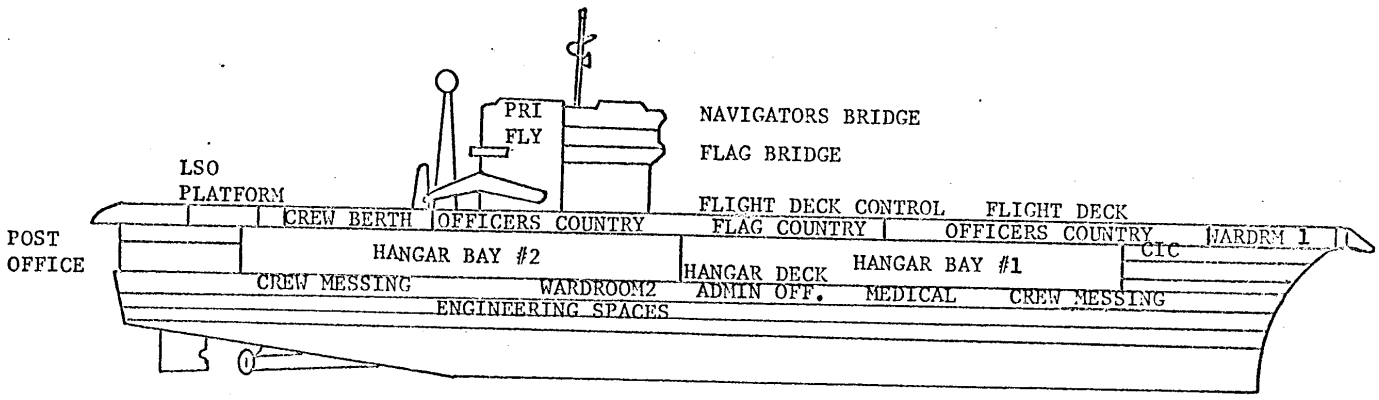

DIAGRAM OF KITTY HAWK CLASS CARRIER

BLUE GULL PILOTS CARRIER BRIEF

A. Ships call sign and hull number.

B. Dates and timetable - ships mission.

C. Disposition of detachment personnel and switch pilots.

D. SAFETY IS PARAMOUNT!

E. SHIPS CONFIGURATION:

1. Review OLS, construction, limitations, and location.
2. Briefly discuss arresting gear and barracades.
3. Deck diagram.
4. Ships lighting (during IFR).

F. COMMUNICATIONS:

1. HF frequency (Raspberry).
2. UHF channelization card.

G. Ships operating area and route to rendezvous.

H. Initial check-in:

1. Channel
2. Controlling agency
3. IFF procedures
4. Ships time-hack
5. Ships weather

I. DELTA PATTERN PROCEDURES:

1. IFR
2. VFR

J. SHIPS RADIO TERMINOLOGY:

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1. Fox Corpon

2. Charlie

3. Delta

4. Marshall

5. Button or Channel

6. Clara

7. See-Me

8. Numbers

9. Feet Wet

10. Feet Dry

K. IFR OPERATIONS:

1. Case I, II, and III Recoveries.

2. CCA Procedures.

L. CHARLIE PROCEDURES:

1. Terms: Charlie-5 or Charlie at 40.

2. Plan to pass abeam ramp 4 min prior to Charlie.

M. BREAK:

1. 500 feet.

2. 40 sec past bow.

N. DOWNWIND:

1. Approximately 1 mile abeam.

2. 400 feet.

3. Landing check.

O. 180 DEGREE POSITION:

1. 80K.

2. Spoilers armed, gear down, speed brakes out, hook, 400 feet

P. 90 DEGREE POSITION:

1. 350 feet.

2. 76-78K.

3. Turn rate.

4. You look close.

Q. MEAT BALL AQUISITION:

1. Voice call sign, Meat Ball or Clara, fuel state.

2. Glide slope entry.

3. Effect of roll angle on centered ball.

R. GROOVE ENTRY:

1. Cross wake.

2. Roll out in time.

S. AIRSPEED:

T. LINE UP AND GLIDE SLOPE CORRECTIONS:

1. Small and smooth.

2. Burble.

3. Closure rate and wind-over-the-deck.

4. Power 2-3% higher than field.

U. CUT:

1. Same technique.

2. Touch down attitude.

3. Don't dive for deck.

V. HEAVY WAVE-OFFS AND TOUCH-AND-GO.

W. BOLTER:

1. LSO will call.
2. Spoilers - in and power on.
3. Stay on center line.

X. WAVE-OFF:

1. Mandatory.
2. Voluntary - beware of inflight in-close.
3. Techniques: level wings, power, climb.

Y. ON DECK PROCEDURES:

1. Off-brakes.
2. Roll back.
3. Speed brakes in - LSO will remind you.
4. Hook-up.
5. Taxi ahead.
6. Shut down.or push back.
7. Hand signals.

Z. DECK LAUNCH PROCEDURES:

1. Radio check-in only after starting engine.
2. Taxi ahead to center tail wheel.
3. Launch officer and signals.
4. Flaps up - 70-80%, hold brakes, head not (15° flap is optional for launch).
5. On launch officers signal - full power and go.

SECRET

AA. BINGO PROCEDURE:

1. Review fields.

2. Bingo flight profile.

3. COD on standby.

BB. EMERGENCY PROCEDURES:

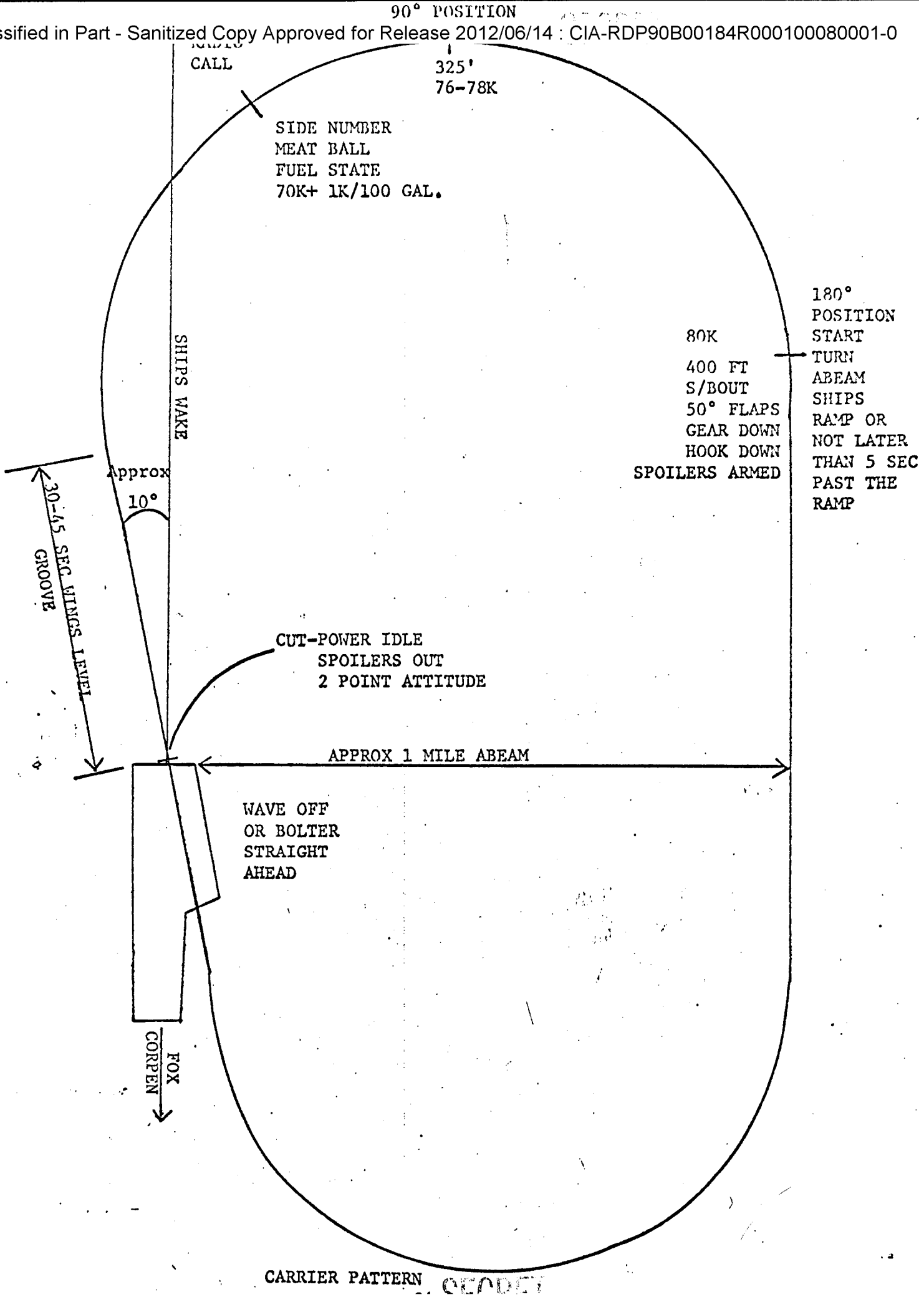
1. Mobile in pri-fly.

2. Emergency bingo helo escort.

CC. SAR PROCEDURES:

1. Facilities available.

2. Techniques employed.



ANNEX A

SECURITY

I. The following Blue Gull security measures are applicable for carrier qualifications and do not supersede the Standard Operating Instructions for carrier operations dated March 1966. The senior security officer or his designated representative will institute the following actions prior to boarding ship:

A. Accompany briefing team to meet the project approved Carrier Officers for initial briefing, to include Project briefing and cover story. During the briefing emphasize that in the event of an aircraft accident no news release will be made by the ship. This will be accomplished by the Detachment Commander with Project Headquarters approval.

B. Coordinate security briefing with Operations for all persons selected for the deployment. Include cover, I.D. cards, and general security regulations during briefing.

C. Coordinate with Supply Section, the actual movement of support equipment to the ship with emphasis on a selected security officer escorting this material.

D. Select a minimum of two security representatives for the detachment going aboard the carrier.

II. After boarding the ship the following procedures will be instituted in liaison with the ship's Captain, Executive Officer, and Marine Detachment Commander:

A. Immediately acquire copies of the room and phone numbers of all detachment personnel, and provide a copy to the Detcom, Communications, and ship's Executive Officer. The Marine Detachment Commander should be given the telephone and room number of security personnel on board. Also, if applicable, a copy of the access list should be provided Marine guards if they are used to protect a

sensitive area.

B. Insure that the Captain or his Executive Officer announce to the entire ship's complement, the general cover story provided at the initial briefing together with any special rules required during the short period of time the article is on board ship (no photography, no discussion of the article on ship, etc.).

C. Insure the article is properly protected during the short time on deck, (including fuel if applicable).

D. Inspect areas where classified equipment or material are to be stored to insure adequate protection, especially any Communications area.

E. Upon completion of the sorties, the Senior Security Officer will debrief carrier staff members. At this debriefing insure all materials pertaining to Blue Gull are turned over to the Senior Security Officer for return to home base (plat tape, cover story, etc.).

F. Insure all classified material and equipment has been assembled for return to home base. A security officer will be designated as a courier for return of all classified items to home base.

G. Upon return to home base, prepare a written report for the information of all security staff members listing any problems that may have been encountered.

SECRET

ANNEX B

COMMUNICATIONS

Carrier Operations Requirements

Communications has two separate requirements during carrier operations:

I. Staff Communications

The host vessel will be expected to provide over-the-counter service to or from the communicator assigned as part of the deployment team. Traffic addressed to or from the deployment team may be either OTP (five-letter groups) or OTT (scrambled tape) with the choice dependent on equipment deployed and facilities available aboard the vessel. If OTT compatible equipment is deployed by us, the host vessel will be expected to provide secure quarters and working space for the equivalent on one each M-28 ASR and associated crypto material. If OTP is used, private office space will be required by our communicator during the decipherment/encipherment process.

II. Air-Ground Communications

This unit will ordinarily deploy one each 42-inch (high) equipment rack containing reception/telemetry equipment. Power and antenna connections should be available and supplied by the host vessel, and the best possible privacy provided to the installation. Additionally, the host vessel will be expected to provide on complete HF transceive unit and associated power antennas allowing Upper Single Sideband Service. Minimum transmitter power output should be 400 watts with one kilowatt preferred if possible. A telephone link providing continuing communications between the installed transceiver telemetry position and the deployment commander (in PriFly) must be available during all flight operations involving our vehicle. Dependent on circumstances, the deployment commander will (usually) require a UHF transceive capability during all flight operations involving our vehicle.

ANNEX C

SUPPLY

The scope of the operation will determine the amount of support equipment required. The more comprehensive the operation, the more equipment required and vice versa. The attached sample manifest was for the initial qualification of the U-2R and four operational drivers, in addition to side movement and striking the aircraft below to the hangar deck. The 7,603 pounds and 766 cube numbers are quite representative of an operation of this magnitude. Also included is the listing for the Package "A" carrier kit, for a Phase I deployment taken from the Detachment "G" Mobility Plan 1-69.

For Blue Gull operations, the Supply Section needs the list of equipment to be sent by each section at least 48 hours in advance of the scheduled departure so that a manifest can be prepared. The actual equipment will be delivered to the hangar designated by Supply no later than 24 hours prior to the scheduled departure.

BLUE GULL V

MANIFEST

MANIFEST NUMBER: C130-07 DESTINATION: NORFOLK, VA.

TAIL NUMBER: 715 DATE: 14 NOV 69

ITEM NUMBER	DESCRIPTION	SEC. CLASS.	WEIGHT	CUBE
C-2-101	BOX WOODEN	U	100	4.0
D-1-2D	FUEL PUMPER	u	115	16.3
D-1-3A	BOX	U	168	7.0
D-1-3C	BOX	u	165	8.0
D-3-10	BOX, WORK CLOTHES	U	125	8.0
D-3-11	BOX, ELECT (MUNTZ)	U	150	6.0
D-3-16	BOX, MANUALS & PAPERWORK (PREWITT)	U	150	5.0
D-3-38	CART, 2 BOTTLE NITROGEN	U	395	37.0
D-3-118	CART, WHALE TAIL EQUIPMENT (CONSISTING OF THE FOLLOWING)	U	1065	200.0
	D-3-175 LADDER, 6 FOOT 1 EA			
	D-3-181 LADDER, 6 FOOT 1 EA			
	D-3-188 WING STANDS 2 EA			
	D-3-564 TOW BAR 1 EA			
	D-3-588 POGO'S (SPECIAL) 4 EA			
	D-3-599 BOX, HEADSET 1 EA			
	JACK ASSY, LIGHT WEIGHT 1 EA			
	CHOCK, MLG 1 EA			
	TURNTABLE MLG 1 EA			
	TURNING ROG MLG 1 EA			

SECRET

	TURNING ROD TLG	1 EA		
	CHOCK, MLG FOLLOW-A-LONG	1 EA		
	CHOCK, TLG FOLLOW-A-LONG	1 EA		
	GREASE PLATE	2 EA		
	TIE ROD, MLG TO TLG	1 EA		
	KIT, WING FOLDUP	1 EA		
	JIG, TLG DOOR ROD	4 EA		
	ROD, TLG DOOR	7 EA		
	PITOT COVER	1 EA		
	SCRAMBLE HANDLE COVER	1 EA		
	DRIFTSIGHT COVER	1 EA		
	PIN, HOOK SAFETY	2 EA		
	ROD, HOOK LATCHING	1 EA		
D-3-507	DOLLY, NOSE	U	1320	185.0
D-3-520	SULKY, RG38	U	530	140.0
D-3-621-B	BOX, LEAP FROG	U	175	6.0
D-3-652-A	STAND, COCKPIT ENTRANCE (STEPS)	U	36	6.7
D-3-652-B	STAND, COCKPIT ENTRANCE (PLATFORM)	U	42	12.9
D-3-660-B	BOX, ARRESTING HOOK KIT & 1 SET HYDRAULIC HOSES W/O D'S	U	185	13.5
D-3-666	BOX, CAMERA EQUIPMENT	U	135	8.0
D-3-667	BOX, SLING FOR LIFTING ACFT	U	1092	30.1
D-3-668	N2 BOTTLE	U	165	3.2
D-3-669	DOLLY, 4 WHEEL (CONSISTING OF):	U	610	21.5
	2 EA TLG WHEEL, 2 EA SHOT BAGS, 10 EA			

SECRET

	D-3-583-B BOX, SERVICE OIL, CSD AND			
	D-3-634-B BOX, SERVICE OIL HYDRAULIC			
E-4-111R	TOOL BOX	U	60	2.0
E-4-114R	SEAT KIT BOX	U	60	3.5
E-4-103R	PARACHUTE BOX	U	80	4.5
E-4-102R	SPARES CRATE	U	90	6.0
E-1-2	SUIT CASE (TV EQUIP)	U	50	3.5
D-3-155	ROLLAWAY (FRYER)	U	300	17.0
D-3-156	TOOL BOX (FRYER)	U	80	1.5
D-3-670	RAMP	U	260	10.4
		TOTAL	7603	766.6

SECRET

PACKAGE "A"

CARRIER KIT

ITEM NO.	DESCRIPTION	DIMENSIONS	WEIGHT	CUBE
D-3-10	Box, Work Clothes	37 X 21 X 19	125	8.0
D-3-11	Box, Electricians	33 X 18 X 16	150	6.0
D-3-16	Box, Manuals and Paperwork	31 X 17 X 15	150	5.0
D-3-38	Cart, 2 Bottle Nitrogen	33 X 32 X 60	395	37.0
D-3-118	Cart, Whale Tail Equipment	120 X 60 X 48	1065	200.0

Consists of:

D-3-175 Ladder, Six Foot
D-3-181 Ladder, Six Foot
D-3-188 Wing Stands (2 ea)
D-3-564 Tow Bar (1 ea)
D-3-588 Pogo's - Special (2 ea)
D-3-599 Box, Headset (1 ea)
25 Lb Shot Bags (10 ea)
Jack Assy, Lightweight (1 ea)
Chock, MLG (1 ea)
Turntable, MLG (1 ea)
Turning Rod, MLG (1 ea)
Turning Rod, TLG (1 ea)
Chock, MLG Follow-Along (1 ea)
Chock, TLG Follow-Along (1 ea)
Grease Plate (2 ea)
Tie Rod, MLG to TLG (1 ea)
Kit, Wing Foldup (1 ea)
Jig, TLG Door Rod (4 ea)
Rod, TLG Door (7 ea)
Pitot Cover (1 ea)

	Scramble Handle Cover (1 ea) "D" Ring Cover (1 ea) Driftsight Cover (1 ea) Pin, Hook Safety (1 ea) Rod, Hook Latching (1 ea) Quantities of: Grease, Rope, Rags, Nylon Drag Straps, Tie Down Straps			
D-3-	Rollaway, Crew Chief	42 X 2 X 36	300	17.0
D-3-	Tool Box, Crew Chief	20 X 9 X 14	80	1.5
D-3-	Tool Box, Electricians	20 X 8 X 7	50	1.0
D-3-	Tool Box, Mechanics	20 X 8 X 7	50	1.0
D-3-	Tool Box, Mechanics	20 X 8 X 7	50	1.0
D-3-507	Dolly, Nose	64 X 57 X 64	1320	185.0
D-3-502	Sulky, RG 38	82 X 26 X 246	530	140.0
D-3-583B	Box, Service Oil, CSD	44 X 25 X 20	60	12.5
D-3-599	Box, Headset	13 X 13 X 9	10	1.0
D-3-521B	Box, Leap Frog	33 X 18 X 16	175	6.0
D-3-634B	Box, Service Oil, Hydraulic	19 X 13 X 11	29	1.5
D-3-652A	Stand, Cockpit Entrance (Steps)	5 X 36 X 64	36	6.7
D-3-652B	Stand, Cockpit Entrance (Platform)	22 X 26 X 39	42	12.9
D-3-660B	Box, Arresting Hook Kit & 1 Set of Hydraulic Hoses W/O.D.'s	69 X 20 X 17	185	13.5
D-3-667	Box, Sling for Lifting Aircraft	17 X 88 X 44	1092	30.1
		TOTALS	5894	686.7

SECRET

HOST PROVIDES:

1. Lox Servicing.
2. 28V DC External Power Unit.
3. 400 Cycle, 115V AC, External Power Unit.
4. Air Start Turbine.
5. Tug or Towing Vehicle

SECRET

ANNEX D

MAINTENANCE

The maintenance annex contains a list of the support equipment for the flight deck plus the sequence of events following a trap landing and turn-around. Included are the procedures for moving the aircraft to the hangar deck. Also attached is a chart for the comparison of JPTS and JP-5 fuels.

U-2R CARRIER TRAPPED LANDINGS AND TURN-AROUND PROCEDURES:

I. PREPARATORY DUTIES:

A. Equipment - Upon arrival at the aircraft carrier, all equipment will be properly positioned and secured (tied down) in the areas assigned.

B. Flight Deck/Elevator - Prior to making a trapped landing, a chalk line will be laid out on the Flight Deck as directed by the LAC Maintenance Supervisor and Operations Officer to position the aircraft for takeoff. Chalk lines will also be laid out on the number two (2) Elevator extending out onto the Flight Deck.

C. Aircraft Dimensions for Layout:

1. Forward face of Elevator to MLG guide line - 29' 4", (Ref. RG 296).

2. MLG to TLG guide line - 21' 9", (Ref RG 296).

3. STOP MARKS for aircraft on Elevator - 4' 0" inboard from Elevator outboard edge. (R/H wing overboard - 47' 9"), (L/H wing clearance - 1' 6").

4. Nose to MLG - 27' 0".

5. TLG to end of dog house - 14' 1".

6. Aircraft total length - 63' 1".

D. Equipment Placement on Flight Deck - The following equipment will be brought to the Flight Deck and secured in the vicinity of the Island prior to the arrival of the aircraft:

1. Sulky.
2. Nitrogen Cart - 2 bottle with Milton kit.
3. Fuel truck.
4. Jack, MLG - Lightweight.
5. Box, Headsets.
6. Box, Leap Frog.
7. Cockpit Entrance Stand.
8. Whale-Tale Dolly which contains the following items:
   - (a) Ladder - six foot (2 each).
   - (b) Tow Bar - TLG, RG 158.
   - (c) Turning B'r - MLG, RG 159.
   - (d) Tie Rod - MLG to TLG, RG 160.
   - (e) Turntable - MLG.
   - (f) Crease Plate - TLG (Large).
   - (g) Rod, arresting hook uplock.
   - (h) Wing Tip folding kit.
   - (i) Chock, MLG.
   - (j) Pogo Pins, (four each)
   - (k) Pogos - four (4) each with locking caps.
   - *(l) Chains - Tie Down (2 each).
   - *(m) Chocks - MLG and TLG for stop point on elevator.
   - (n) Straps, Tie Down, with hooks (8 each).
   - (o) Tool Trays, mechanics.

* Items l and m supplied by Navy.

SECRET

(p) Shot Bags, 25 lbs, (10 each).

(q) Chocks, Follow-Along (2 each).

(r) Clothing and Goggles for Flight Deck.

(s) Pogo Chocks (2 each).

(t) Wing Stands (2 each).

II. CREW FUNCTIONS DURING TRAPPED LANDINGS/TURN-AROUNDS:

A. Maintenance Crew Members stationed near rear of Island or as directed by "AIR BOSS" or Flight Deck Officer.

B. Aircraft trapped.

C. Crew Members proceed to their assigned stations at the A/C.

D. Pilot continues to run engine.

E. Pogos installed (No Springs).

F. Gear Pins installed.

G. Two (2) men grease and retract hook.

H. Crew Chief signals to Pilot:

1. Speed Brakes - Closed.

2. Wing Flaps - Faired.

3. Taxi TLG over Arresting Cable.

4. Shut Engine Down (if applicable).

I. MLG Chock in place.

J. Two (2) chains on fuselage attaching points.

K. Seat Pins installed at pilot's discretion (if applicable).

L. Disconnect TLG scissors, install Sulky and attach towing vehicle, or push back.

M. Remove two (2) tie down chains and MLG Chock.

N. Position aircraft at takeoff point.

O. Aircraft chocked and chains (2 each) installed.

P. Sulky removed, if applicable.

Q. TLG Scissors connected and visual check of area made.

R. Visual check of MLG and related area made.

S. Fuel Truck in position for servicing - "CHOCKED AND SECURED", (DRIVER TO REMAIN IN CAB DURING SERVICING).

T. Fueling completed - Truck moved to area near the Island or as directed by "AIR BOSS".

U. Fuel Counter set to fuel load and circuit breaker set.

V. Attach Air Turbine Start Unit.

W. Attach External Power Unit - 28 Volt DC and 400 cycle, 115 Volt, 3 phase AC.

X. Check Seat Safety Pins.

Y. Canopy closed and locked.

Z. Crew Chief signals Pilot for engine start.

AA. External Power Units removed.

BB. Gear Downlocks removed and stowed in Wheel Well.

CC. Left and right pogos removed - Wing held level for hand launch.

NOTE: Fuel Load must be even enough to allow one man to balance aircraft on the right wing.

DD. Crew Chief signals Pilot for brakes.

EE. All Aircraft tiedowns removed.

FF. MLG Chock removed.

GG. At this point, LCC Crew Chief turns launch over to Launch Officer.

U-2R CARRIER TRAPPED LANDING AND MOVEMENT TO HANGAR DECK PROCEDURES:

I. PREPARATORY DUTIES:

A. Equipment - Upon arrival at the carrier, all equipment will be properly positioned and secured (tied down) in the areas assigned.

B. Flight Deck/Elevator - Prior to making a trapped landing, chalk lines will be laid out on number two (2) elevator extending out onto the Flight Deck showing the position that the MLG and TLG must track while pushing the aircraft onto the Elevator from the Flight Deck and off the Elevator to the Hangar Deck.

C. Aircraft Dimensions for Lavout:

1. Forward face of Elevator to MLG guide line - 29' 4" (Ref RG 296).

2. MLG to TLG guide line - 21' 9" (Ref RG 296).

3. STOP MARKS for aircraft on Elevator - 4' 0" inboard from Elevator outboard edge. R/H wing overboard - 47' 9". L/H wing clearance - 1' 6".

4. Nose to MLG - 27'.

5. TLG to end of Dog House - 14' 1".

6. Aircraft total length - 63' 1".

D. Equipment Placement on Flight Deck - The following equipment will be brought to the Flight Deck and secured in the vicinity of the Island prior to the arrival of the aircraft.

1. Nitrogen Cart - 2 bottle with Milton kit.

2. Whale-Tale Dolly which contains the following items:

(a) Laddar - Six foot (2 ea).

(b) Tow Bar, TLG, RG 158.

(c) Turning Bar - MLG, RG 159.

SECRET

(d) Tie Rod - MLG to TLG, RG 160.

(e) Turntable - MLG.

(f) Grease Plate - TLG (Large).

(g) Rod - Arresting hook uplock.

(h) Wing tip folding kit.

(i) Chock - MLG.

(j) Pogo Pins - 4 each.

(k) Pogos - 4 each (with locking caps).

*(l) Chains - Tie down (2 each).

*(m) Chocks - MLG and TLG at Stop Point on Elevator

(n) Straps - Tie Down with hooks (8 each).

(o) Tool trays - Mechanics.

(p) Shot Bags - 25 lbs (10 each).

(q) Chocks - Follow-Along (2 each).

(r) Clothing and Goggles for Flight Deck.

(s) Pogo Chocks (2 each).

(t) Wing Stands (2 each).

* Items l and m supplied by Navy.

II. CREW FUNCTION ON TRAP LANDINGS AND MOVEMENT OF AIRCRAFT TO HANGAR DECK:

A. Receiving Aircraft and Preparation for Movement to Number Two (2) Elevator.

1. Maintenance crew members stationed near rear of Island or as directed by the "AIR BOSS" or Flight Deck Officer.

2. Aircraft trapped.

SECRET

3. Crew members proceed to their assigned stations at the aircraft.

4. Pilot continues to run engine.

5. Pogos installed (Normal method at this time), MLG and TLG downlock pins installed.

6. Two (2) men grease and retract hook.

7. Crew Chief signals to Pilot:

(a) Speed Brakes - "Closed".

(b) Flaps - "Faired".

(c) Taxi TLG over arresting cable.

(d) Shut engine down at this time.

8. MLG chock in place.

9. Two (2) chains on Fuselage attaching poing.

10. Personal Equipment brings cockpit stand to aircraft and down loads the pilot. "ALL" Seat Safety Pins installed.

11. Disconnect TLG Scissors and install Sulky and attach towing vehicle.

12. Remove two (2) chains and wheel chock.

13. Position aircraft on lines layed out adjacent to Elevator with nose into the wind. NOTE: Push beyond marked point, then put MLG turntable in position, pull aircraft backward onto turntable for proper direction of rotation.

14. Carrier speed should be reduced by this time and no turns made until aircraft is moved into Hangar Deck.

15. Place Grease Plates under TLG - then remove Sulky and tow vehicle.

SECRET

16. Make certain aircraft is secure, chains installed, prior to disconnecting Tow vehicle.

NOTE: At this time the following jobs are being worked simultaneously:

17. Left and right pogo locks installed.

18. Fold L/H Wing Tip, install nylon strap.

19. Measure and record on masking tape in wheel well the MLG Strut Height - This measurement required for future deflation of Strut.

20. Measure and record on masking tape in wheel well the TLG Strut Height - This measurement required for future deflation of Strut.

21. Disconnect MLG Scissors, Brake hose clip, etc., for gear rotation - keep all removed parts attached to the aircraft, NOT in Tool Boxes.

22. Inflate MLG to full "UP" with nitrogen (Use minimum pressure). After bottoming Strut "UP", slowly reduce pressure in Strut until the slightest of movement is noticed Downward.

23. Inflate TLG to full "UP" with nitrogen (Use minimum pressure). After bottoming Strut "UP", slowly reduce pressure in Strut until the slightest of movement is noticed Downward.

24. Disconnect L/H TLG door rod (Retain rod adjustment with tape). Using safety wire, tie L/H TLG door "UP" to provide clearance for tow bar.

25. Attach RG 159 Turning Bar to MLG.

26. Attach small tow bar to TLG (Check that Scissors is disconnected).

27. Rotate MLG FIRST, ninety (90) degrees.

28. Next, rotate TLG ninety (90) degrees.

29. Connect Tie Rod to MLG Turning Bar, and TLG to Tow Bar.

30. Place ten (10) shot bags on L/H wing adjacent to folded tip. If more weight is required, use men on wing.

31. Position the following:

(a) One (1) man - follow-along chock, MLG.

(b) One (1) man - follow-along chock, TLG.

(c) One (1) man - Tail steering bar.

(d) One (1) man - Main steering bar.

(e) One (1) man - Brakes in cockpit. Insure he has a life jacket.

(f) One (1) man - At nose of aircraft directing aircraft movement (Keeping aircraft fuselage center line parallel to Elevator Edge.)

(g) One (1) man - At tail of aircraft watching clearances.

(h) Ten (10) men - At fuselage under wing area to push aircraft.

32. With the aid of six to eight (6-8) "Blue Shirts", push the aircraft SLOWLY onto the Elevator, following chalk lines - keeping MLG and TLG moving so as to keep fuselage center line parallel to Elevator Edge.

33. With aircraft in position on Elevator and chocks under both gear wheels, push L/H wing down on pogo as far as possible and strap wing to Elevator at the pogo to tie down ring.

34. Using chains, secure aircraft to Elevator at L/R fuselage tie down fittings.

35. With aircraft secure, move all equipment onto the Elevator and secure.

36. Elevator "DOWN".

37. On arrival at Hangar Deck level, the placement of men will be the same as item 31, except the people moving the aircraft will be pulling on a nylon cord at L/H Wing Tip rather than pushing on the fuselage.

38. With aircraft in position on Hangar Deck, install left and right wing stands. Using chains, tie down Fuselage left and right and secure tail with two (2) straps wrapped around TLG strut. Strap pogo tiedowns.

III. CREW FUNCTION ON MOVEMENT OF AIRCRAFT FROM HANGAR DECK TO FLIGHT DECK:

A. Reverse of procedures of movement of aircraft to Hangar Deck.

PROPERTY	JPTS	REFERENCE	JP-5A	REFERENCE
Freeze Point	-78° to -80°F -72°F	Mr. Clouse Ashland Oil, Ashland, Kentucky MIL-T-25524A	-51°F -54°F	MIL-T-5624G T.O. 42B1-1-14 pg. 2, par. 19
Flash Point	110° to 120°F	Project Directive No. 45-5-1	140°F	MIL-T-5624G
Anti-Icing	.10% to .15% into tank	Project Directive No. 45-5-1	.10% to .15% into tank	MIL-T-5624G
Sediment Limit	8.0 mg/gal	T.O. 42B-1-1 pg. 5-2, para. 5-15	8.0mg/gal	T.O. 42B-1-1 pg. 5-2, par. 5-15
Anti-Icing	.08% into A/C	Project Directive 45-5-1	.09% into A/C	MIL-T-5624G
API Gravity	46° to 50°F	Project Directive 45-5-1	36° to 48°F	MIL-T-5624G
Initial Boiling Point	325°F	Mr. Clouse Ashland Oil Ashland, Kentucky	475° - 500°F	Mr. Clouse Ashland Oil Ashland, Ky.

Continued

Vapor Pressure @ 100°F	0 psi	Mr. Clouse Ashland Oil Ashland, Ky	0 psi	Mr. Clouse Ashland Oil Ashland, Ky
Thermal Stability	less than 3 rating	Mr. Clouse Ashland Oil Ashland, Ky	less than 3 rating	Mr. Clouse Ashland Oil Ashland, Ky
End Point	390°F	Mr. Clouse Ashland Oil Ashland, Ky	475° - 500°F	Mr. Clouse Ashland Oil Ashland, Ky

ANNEX E

NAVIGATION

I. EQUIPMENT REQUIRED:

A. Bingo plotter.

B. D.R. Equipment.

C. Bingo display boards (2).

1. Grease pencils (2).

2. Multilith pads.

D. Diversion graphs.

E. Training schedule including call signs.

II. PLANNING FACTORS:

A. The following data is based on normal climb and descent speeds. All climb data is computed to 23,000 feet to remain below the positive control airspace.

	FUEL	TIME
Start Engines - T.O.	24	-----
Climb	70	0:04
Descent	35	0:15
4 MLP's	160	0:10
Climb	70	0:03.5

B. The following fuel data is based on a typical exercise involving launch from shore, MLP aboard a carrier, then return to shore. IAS for cruise is 170K/250KTAS.

	FUEL	RATE
Start Engines	788	
Takeoff	764	

SECRET

	FUEL	RATE
23M L/O	694	
Cruise		250 GPH
23M B/D	535	
L/O	500	
MLP	340	
S/C	270	
23M L/O		230 GPH
Cruise	60	
20M H/C	30	
Land		

C. DUTIES ABOARD CARRIER:

1. Locate "Air Operations" (Air Ops), called Carrier Air Traffic Control Center (CATCC). It should be adjacent to the "Combat Information Center" (CIC) and "Carrier Control Approach" (CCA). Discuss relay of bingo information to "Primary Flight Control" (PRI-FLY) and arrange to obtain estimated ship's position for the first "Charlie" time. This should be transmitted to "Home Plate" two (2) hours prior to the first scheduled take-off. Give "Bingo Board" to Operations Officer.

2. Prior to the first "Charlie" time determine ship's position and compute bingo information, i.e., Fuel, HDG, Dist, Time for each suitable emergency airfield. The ship;s position can be obtained from the ship's navigator on the bridge or from CIC. Normally bingo information is updated every 30 minutes and called to Pri-Fly.

D. USE OF BINGO FUEL PLOTTER:

1. Draw a reference line on plotter using average area variation so that Mag Hdgs can be read directly from the plotter.

2. Plot ship's position on chart.

3. Obtain 23,000 ft enroute wind from Air Ops or Home Plate and plot the Mag wind vector with tail on the ship's position.

4. Determine approximate time to alternate airfield and place the center of the plotter a proportionate distance down the wind vector.

5. Align reference line with true north and read: Fuel, Hdg, Dist (ground miles), time directly from the plotter.

NOTE: Plotter is accurate for a climb to 23,000 ft, cruise at 170K IAS and arrive over the terminal fix with 60 gals remaining. For bingo bases less than 30NM, use sea level diversion graph. An enroute descent is advised if terminal weather is marginal.

E. NAUTICAL TERMS:

1. Fox corpen - Ship's heading.

2. Charlie - Cleared for approach.

3. Charlie time - touch down time.

4. Delta - Hold, pending approach.

5. Clara - No meatball.

6. Feet Dry - over land.

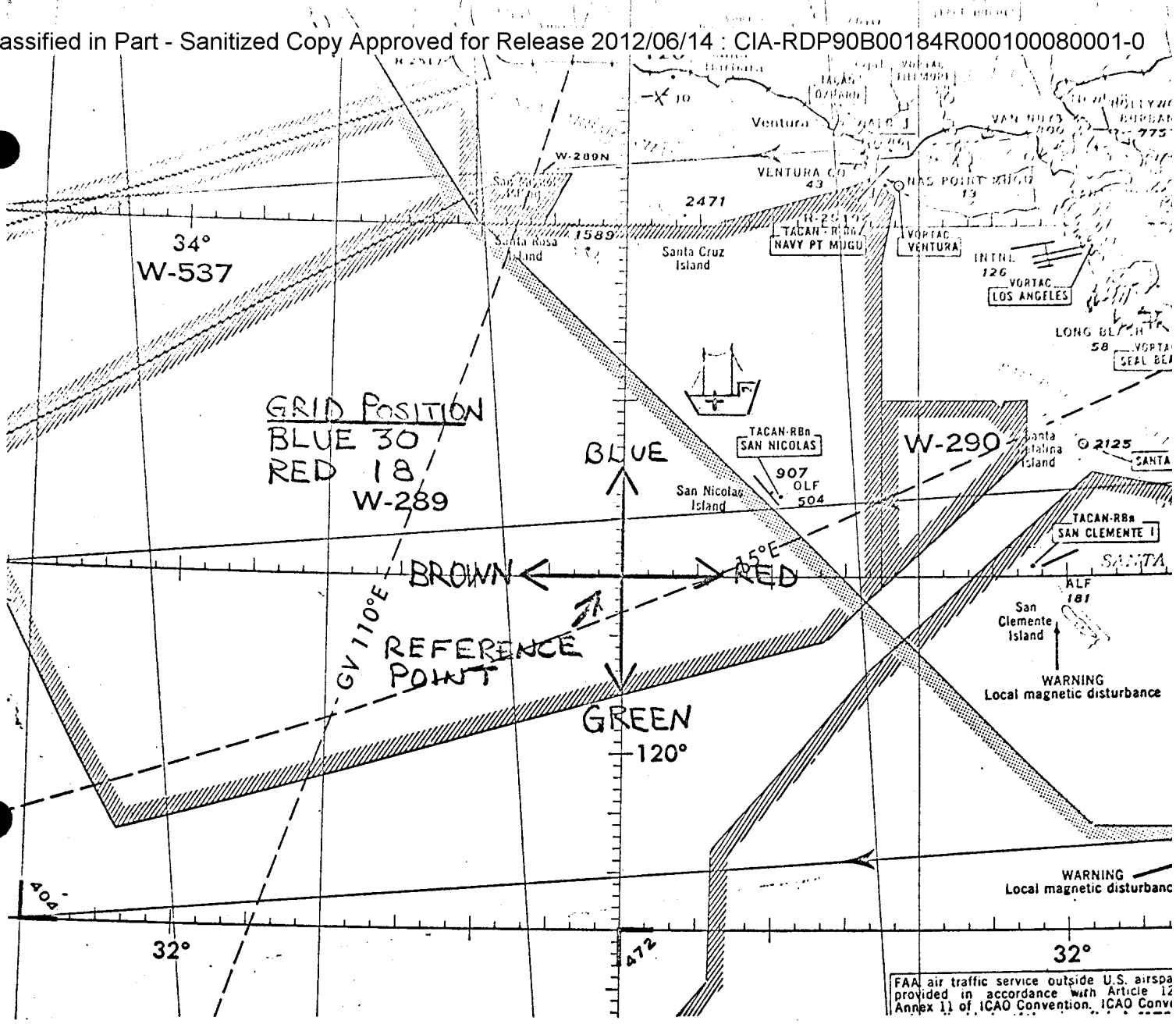
   Feet Wet - Over water.

7. Bingo - Proceed to alternate.

8. Trap - Full stop landing.

F. SHIP POSITION:

Attached is a sample color-coded chart which can be used to pass the ships position over the radio without compromising its actual location.



1. Select the reference point (above example 33°N, 120°W) prior to deployment. Use the approximate operating area as designated by the ship at the pre-sail briefing.

2. Plot the reference point and the ship's actual position (33°30'N, 119°42'W)

3. Encode the ship's position by using the color code and minutes of latitude and longtitude. In the example above, count up from reference point 30 minutes of latitude along the Blue vector and count out from the reference point 18 minutes of longitude along the red. (Blue 30, Red 18)

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ANNEX F

OPERATIONS

CONTENTS: Sample Ship's Frequency Card

Carrier Controlled Approach Card (CCA)

Deck Diagram

Sample of Time Table

FCLP Checklist

LENS Message and Setting Information

Ship/Airplane Compatibility

Elevator/Airplane Clearance

SAMPLE FREQUENCY CARD

UHF CHANNELIZATION FOR AIRCRAFT

CHANNEL	FREQUENCY	USE
1	339.5	Departure Control
2	361.2	Enroute/Tanker Control
3	312.3	CCA Approachl/final 1/Land Launch
4	284.4	Marshall Control
5	318.6	CCA Approach 2/Final 2
6	270.4	Joint/Combined scene of Action; Surface Air Common; Helo Common
7	275.6	UHF Homer
8	Various	Squadron Common
9	282.8	Joint/Combined Scene of SAR; UHF/DR(R)
10	353.0	Strike/Eagel Net
11	364.2	Interceptor Common
12	361.9	Secondary Marshall/Check-in/out
13	282.2	FAD/TAD 1/CIC Check in/out
14	280.6	FAD/TAD 2
15	265.0	FAD/TAD 3
16	360.6	Norfolk Approach Control
17	352.4	Norfolk Ground Control
18	279.2	Oceana Approach Control
19	340.2	Navy Tower Primary
20	360.2	Navy Tower Secondary
Guard	243.0	Military Emergency and Distress

NAVIGATIONAL AIDS ABOARD USS AMERICA (CVA-66)

TACAN CHANNEL	IDENT	LF HOMER	UHF HOMER	LAND/LAUNCH
13	BS	404 KHZ	275.6 MHZ	312.3 MHZ

CALL SIGN

COURAGE

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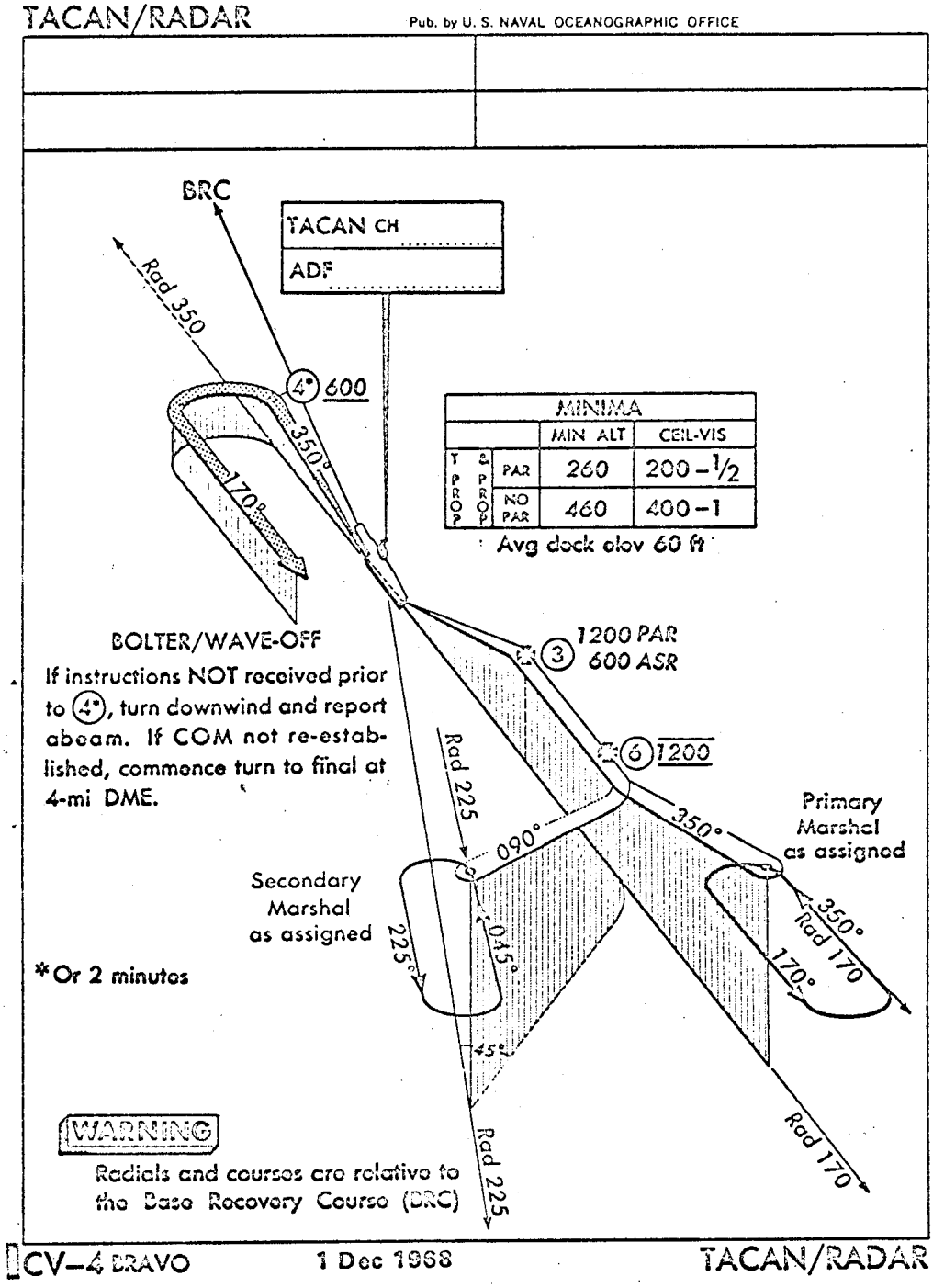

RADAR CARRIER CONTROLLED APPROACH (CCA)

PROBABLE TIME TABLE

PILOT	PRIORITY	T&G/TRAP	DECK TIME
DAN	1	4/2	35
BEN	2	4/2	35
DICK	3	4/2	35
HARRY	4	4/2	35
TOTALS		16/8	2+20

PORTABLE TIME TABLE

TIME	ARTICLE #	PILOT	EST. FUEL	EVENT
0845/1245	1	DAN/DICK	888	Launch Home Plate
0920/1320	2	BEN/HARRY	888	Launch Home Plate
0930/1330	1	DAN/DICK	530	Enter Pattern
0948/1348	1	DAN/DICK	500	4 T/G Completed
0953/1353	1	DAN/DICK	360	Trap #1
1001/1401	1	DAN/DICK	280	Trap #2
1005/1405	1	DAN/DICK	270	Bingo Home Plate
1005/1405	2	BEN/HARRY	530	Enter Pattern
1023/1423	2	BEN/HARRY	500	4 T/B Completed
1028/1428	2	BEN/HARRY	360	Trap #1
1036/1436	2	BEN/HARRY	280	Trap #2
1040/1440	2	BEN/HARRY	270	Bingo Home Plate
1040/1440	1	DAN/DICK	60	Land Home Plate
1115/1515	2	BEN/HARRY	60	Land Home Plate

PLANNING FACTORS: T/G - 4 1/2 minutes, 35 gallons.
Trap - 9 minutes, 80 gallons, 4 minutes on deck.
Deck Launch - 250 ft. Landing Rollout - 160ft Ave.
220ft Max.

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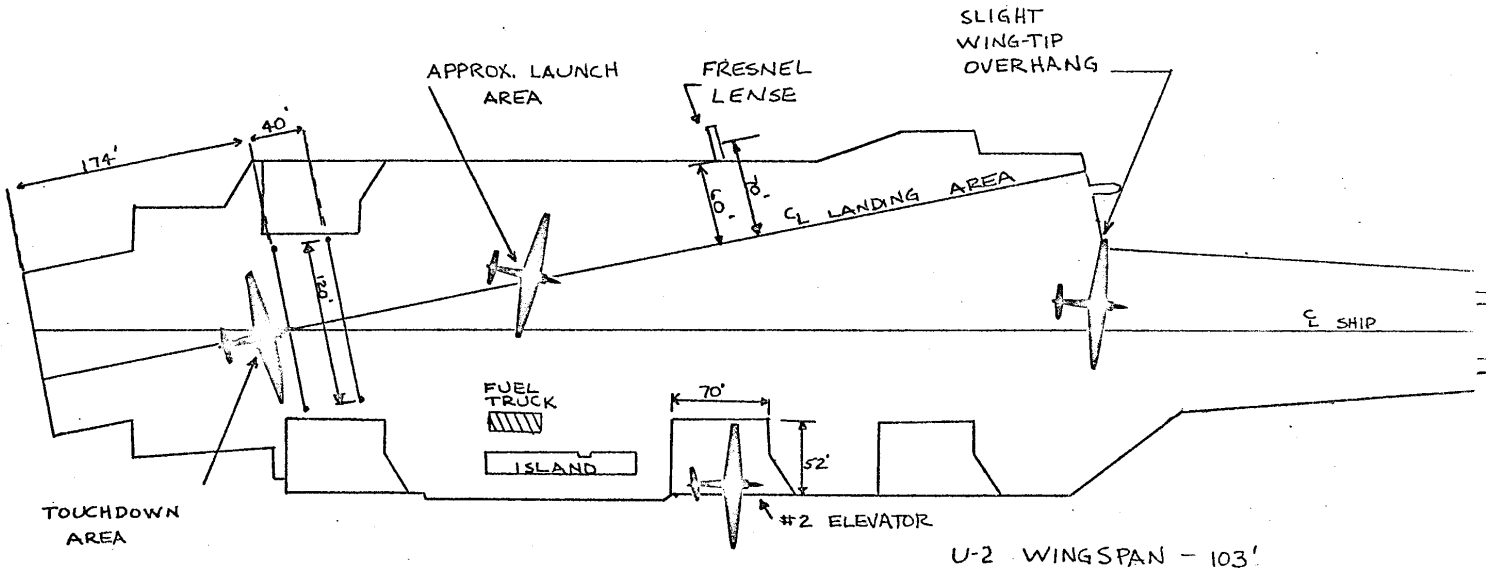

DECK DIAGRAM USS AMERICA (CVA-66)

FCLP CHECKLIST

1. _____ Advise maintenance of 50° flap and sortie requirements.
2. _____ Drivers FCLP briefing.
3. _____ Have electric ship check and position the mirror.
4. _____ Tower advised of "transition pattern". (They will monitor 315.9.)
5. _____ Check mobile vehicle gas and oil.
6. _____ Drivers flight briefing.
7. _____ Pole check mirror.
8. _____ Mobile for takeoff.
9. _____ Drivers debrief.

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NAVAL MESSAGE CONCERNING FRESNEL LENS

P 182253Z NOV 69
FM NAVAIRENGCEN PHILA
TO COMNAVAIRLANT
USS AMERICA
UNCLAS
1385Ø FRESNEL LENS BASIC ANGLE (B/A) ADJUSTMENTS
A. USS AMERICA 15Ø2Ø3Z NOV 69 NOTAL (C)
B. MY ACFT RECOVERY BUL 61-12D
C. COMNAVAIRLANT 151817Y NOV 69
1. B/A of 2-3/4 DEG REQUESTED BY REF A IS OUTSIDE NORMAL OPERATIONAL RANGE OF FRESNEL LENS AND IS NOT RECOMMENDED BY REF B.
2. TECHNICAL INFO FOR SETTING B/A AS REQUESTED IN REF C FOLLOWS:
A. SET CONTROLS TO LINE MODE, STAB ZERO LOCK, R/A 7.5 AND B/A 3 DEG N
B. MONITOR A5ØØ PITCH DECK EDGE RESPONSE INDICATORS AND ADJUST STRIP PITCH POT A534R2, FOR PITCH ANGLE OF 2-3/4 DEG N.
C. MASK B/A DIALS ON REMOTE CONTROL PANELS AND MAKE NEW MARKINGS FOR 2-3/4 DEG, 3 DEG, 3-1/2 DEG AND 4 DEG AS READ OUT FROM PITCH DECK EDGE RESPONSE INDICATORS.
D. VERIFY B/A SETTINGS WITH DECK EDGE POLE CHECKS:
AT 79 FT MK, 2-3/4 DEG 42.1 IN.
3 DEG 45.7 IN.
3-1/2 DEG 54.5 IN. N
AT 69 FT MK, 4 DEG 54.5 IN.
TOLERANCES ON POLE CHECKS PLUS OR MINUS ONE IN.
E. WITH ABOVE MOD, FRESNEL LENS OPERATIONAL IN LINE MODE, GYRO NORMAL, POINT MODE NOT VALID.
F. FOR NORMAL CONFIGURATION READJUST STRIP PITCH POT AND REMOVE MASK FROM B/A DIALS.N.

BT

NAVAL MESSAGE CONCERNING FRESNEL LENS

P 211439Z NOV 69
FM COMNAVAIRLANT
TO USS AMERICA
INFO NAEC
UNCLAS
1385Ø FRESNEL LENS BASIC ANGLE ADJUSTMENT
A. YOUR 15Ø2Ø3Z NOV 69
B. NAECPHILA 182255Z NOV 69
1. CAFSU REP R.F. ECKSTINE WILL ARRIVE 21 NOV 60 TO ASSIST WITH REF A REQUEST.
2. TAKE REF B FORAC WITH FOLLOWING DEVIATIONS:

A. CHANGE PARA D OF REF B AS FOLLOWS:
AT 79 FT MK, 2-3/4 DEG. 41.1 IN.
3 DEG. 44.7 IN.
3-1/2 DEB. 53.5 IN.N
AT 69 FT MK, 4 DEG. 53.75IN.

BT

FRESNEL LENS SETTINGS

I. PURPOSE: To define procedures for U-2 carrier operations utilizing the Mark 6 Fresnel Lens Optical Landing System. This system will provide the pilot with a visual indication of his relative position with respect to a prescribed glide slope.

II. DEFINITIONS:

A. Lens Distance from Center. Distance from center line of landing area to center line of the Fresnel Lens.

B. Lens Factor A. Represents the number of feet the glide slope will be raised or lowered vertically for a corresponding increase or decrease of one unit of roll angle.

C. Lens Factor B. Represents the "ramp to eye" value for a particular basic angle with the lens set at 7.5 units (no roll angle tilt).

D. Roll Angle. Input to the lens unit to raise or lower prescribed glide slope to accommodate the aircraft (U-2) "hook to eye" value.

E. Hook Touch Down Point. The distance forward of the ramp that the hook will hit the deck if the pilot were to fly the "meatball" to touch down.

III. PROCEDURES:

A. Technical information for setting the Mark 6 Fresnel Lens basic angle is as follows:

1. Set controls to Line Mode, Stabilization Zero Lock, Roll Angle 7.5 and Basic Angle 3 degrees.

2. Monitor A500 Pitch Deck Edge Response Indicators and adjust Strip Pitch Potentiometer A534R2, for pitch angle of 2 3/4 degrees.

3. Mask the Basic Angle Dials on the Remote Control Panels; then make new marking for 2 3/4 degrees, 3 degrees, 3 1/2 degrees and 4 degrees for read outs from Pitch Deck Edge Response Indicators.

4. Verify Basic Angle settings with Deck Edge Pole Checks:

At 79 ft mark, 2 3/4 deg 42.1 inches

3 deg 45.7 inches

3 1/2 deg 54.5 inches

At 69 ft mark, 4 deg 54.5 inches

Tolerances on Pole Checks plus or minus one inch.

5. With above modification, Fresnel Lens is operational in Line Mode, Gyro Normal. Point mode stabilization is not valid.

6. To restore normal configuration readjust Strip Pitch Potentiometer and remove mask from Basic Angle Dials.

B. Roll Angle Settings and Hook Touch Down Points are included in the chart in Attachment 2. The U-2 has a 10 ft hook to eye value. All roll angles were computed for 10 ft hook to ramp clearance.

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MARK 6 FRESNEL LENS OPTICAL LANDING SYSTEM SETTINGS

CVA	LENS DISTANCE FWD OF RAMP (FEET)	LENS DISTANCE FROM CTR LINE (FEET)	SETTING FACTOR A	SETTING FACTOR B		ROLL ANGLE		HOOK TOUCH DOWN	
				2 3/4°	3°	2 3/4°	3°	2 3/4° (FT)	3° (
59	413.9	85.0	1.50	19.25	21.06	8.00	6.75	208	191
60	412.5	85.5	1.50	19.18	21.02	8.25	6.75	214	191
61	450.3	80.3	1.41	21.00	22.98	7.00	5.50	214	191
62	421.3	85.6	1.50	19.60	21.44	8.00	6.50	216	191
63	501.7	71.4	1.25	23.51	25.71	4.75	3.00	209	191
64	501.7	71.4	1.25	23.51	25.71	4.75	3.00	209	191
65	491.2	80.1	1.40	23.05	25.21	5.50	4.00	220	191
66	501.5	70.4	1.24	23.46	25.65	4.75	3.00	209	191
67	500.2	72.7	1.28	23.40	25.58	5.00	3.25	214	191

(CAUTION: The Mark 6 Fresnel Lens System of each ship is modified periodically. Any changes in the lense system may render this information invalid. Therefore, prior to each use these values must be verified by the Naval Air Engineering Center, Philadelphia, Pa.)

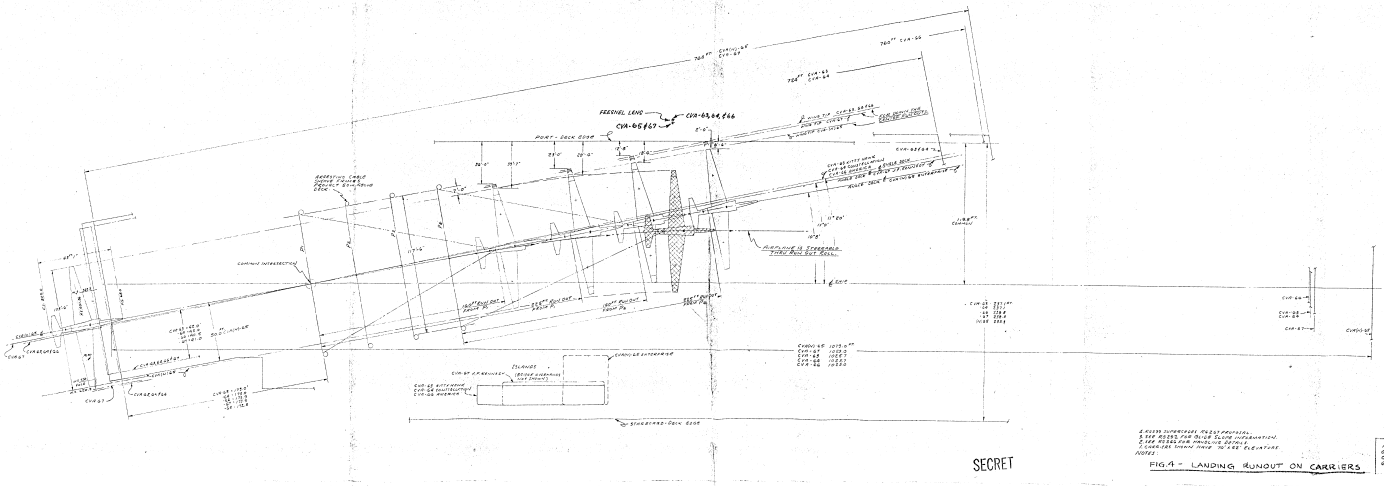

FIG.4 - LANDING RUNOUT ON CARRIERS

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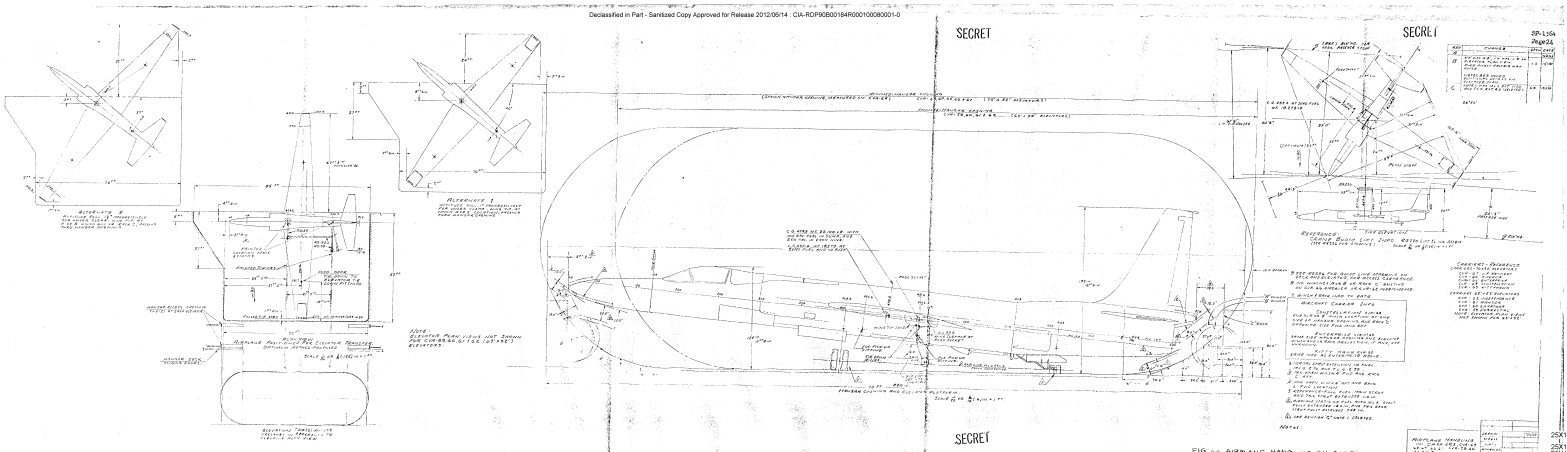

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FIG. 27 AIRPLANE HANDLING ON FACILITIES